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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,457	12/23/2003	Akitoshi Nakajima	90606.3/wa	8150
54071 7590 02/26/2007 YAMAHA HATSUDOKI KABUSHIKI KAISHA C/O KEATING & BENNETT, LLP 8180 GREENSBORO DRIVE SUITE 850 MCLEAN, VA 22102			EXAMINER KIM, CHONG HWA	
			ART UNIT 2167	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/743,457

Applicant(s)

NAKAJIMA ET AL.

Examiner

Chong H. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 25-33 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 25 recites the limitation wherein there are only two locking grooves on a side of the crank-pin hole, whereas the invention originally claimed recites the limitation that includes two sides of the hole each having two locking grooves.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 25-33 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida et al., U.S. Patent 6,312,159 B1.

Ishida et al. shows, in Figs. 1-11, a split type connecting rod that holds a crank-pin through a bearing 10 having a first protrusion 11 and second protrusion 12, comprising: a first

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locking groove (5a and portion of 21 in Fig. 7) or (6a and 7a in Fig. 6) that locks the first protrusion of the bearing when the bearing rotates forward in a circumferential direction of a crank-pin hole; a second locking groove (5b and portion of 21 in Fig. 7) or (6b and 7b in Fig. 6) that locks the second protrusion of the bearing when the bearing rotates backward in the circumferential direction of the crank-pin hole; wherein the first locking groove and the second locking groove are deviated from each other in the circumferential direction; further comprising a large end portion 1a including rod portion 2 and a cap portion 3, wherein the first locking groove and the second locking groove are arranged to extend over both of the rod portion and the cap portion (see Figs. 6 and 7) when the large end portion is fractured and split into the rod portion and the cap portion, the first locking groove is deviated to the rod portion side and the second locking groove is deviated to the cap portion side; wherein when the bearing is split, the first protrusion locked by the first locking groove and the second protrusion locked by the second locking groove are arranged separately on separate portions of the bearing that has been split; wherein the bearing is substantially ring-shaped and disposed on an inner circumferential surface of the crank-pin hole; wherein the bearing includes a rod portion 22 and a cap portion 23 which are divided along a splitting line C of the bearing; wherein at least two of the first locking grooves are provided on a first side of the splitting line and at least two of the second locking grooves are provided on a second side of the splitting line; wherein the first and second locking grooves are substantially arc-shaped; wherein the first and second protrusion are locking lugs; wherein the first and second locking grooves are arranged to prevent the bearing from moving in the circumferential direction; wherein a valley 21 is formed on the inner circumferential surface of the crank-pin hole, the valley includes a base portion, and a fracture starting point groove

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formed at the base portion of the valley; wherein a width of the fracture starting point groove is less than a width of the valley; wherein the split type connecting rod is a nut-less type of connecting rod that is made of one of forged material, a cast material, and a sintered material; wherein the valley includes a pair of sloped portions; wherein the sloped portions define chamfers 17a, 17b for guiding the bearing; wherein the connecting rod is used in an engine of a vehicle; wherein the first and second locking grooves are arranged inwardly from an edge of the crank-pin hole in an axial direction of the crank-pin hole; and wherein the first and second locking grooves are arranged to prevent the bearing from moving in an axial direction of the crank-pin hole.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. in view of Mukai et al., U.S. Patent 4,693,139.

Ishida et al. shows, as discussed above in the rejection of claims 1, 10, and 15, the split type connecting rod comprising the valley with the fracture starting point portions, but fails to show sloped portions having either curved shapes, swelled rounded shapes, or a concave or a rectilinear shape in an upper corner of the valley.

Mukai et al. shows, in Figs. 5 and 6, the split type connecting rod comprising a valley having fracture starting point grooves and sloped portions 11 and 12 with rectilinear shapes 11 and 12.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the shape of the sloped portion of Ishida et al. with the rectilinear shapes as taught by Mukai et al. in order to prevent breaking and dividing along the rectilinear shaped portion of the connecting rod as described from col. 3, line 48 to col. 4, line 3.

As to the matter of the other different shapes, it would have been obvious to modify the rectilinear shape as taught by Mukai et al. with either curved shapes, swelled rounded shapes, or concave shapes, since such a modification would have involved a mere change in the shape of the sloped portion. A change in shape is generally recognized as being within the level of ordinary skill in the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

Response to Arguments

6. In response to the applicant's argument that Ishida et al. fails to show the both locking grooves extending over both the rod and cap portions, it is the Examiner's view that Ishida et al. shows such configuration. Ishida et al. shows, in Fig. 6 the locking grooves 6a, 7a and 6b, 7b extending over both the rod and cap portions and they are both deviated from each other in the circumferential direction. Furthermore, Ishida et al. shows in Fig. 7 the locking grooves 5a and 5b extending over both the rod and cap portions. It can be construed that the end portions of the groove 21 that crosses both locking grooves 5a and 5b be part of the grooves 5a and 5b since the end portions, in a way extend, the grooves 5a and 5b over the rod and cap portions 2 and 3.

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7. In response to the applicant's argument regarding claim 25, it is the Examiner's view that the subject matter in claim 25 is directed to an invention that is independent or distinct from the invention originally claimed as discussed above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chong H. Kim whose telephone number is (571) 272-7108. The examiner can normally be reached on Monday - Friday; 9:00 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

chk
February 22, 2007



CHONG H. KIM
PRIMARY EXAMINER